Amendment to the Specification:

A new ABSTRACT is enclosed which is believed to be in proper form.

Please amend the paragraphs at page 2, lines 4 through 16, as follows:

Deformations of flexible lower courses of asphalt pavement should be limited to reduce cracking of the surface course of this pavement. It can be achieved by the use of concrete subbase or at least cement treated subbase instead of ~~the~~ crushed stone ~~one~~; the base course of flexible pavement should ~~be remained~~ remain flexible. The increase of rigidity of asphalt pavement should reduce the cracking of surface course with the corresponding reduction of the maintenance cost of this pavement. It is important to reach reduction of the maintenance cost of this pavement without consideration increase of its initial cost due to use of concrete subbase instead of the crushed stone one.

The cost of concrete subbase s determined by the value of flexural strength of concrete, which is estimated by the value of modulus of rupture. The choice of modulus of rupture of concrete of subbase is determined merely by the economical reasons. Asphalt pavement is a composite structure, and the increase of capacity of subbase means the corresponding increase of capacity of pavement as a whole.

Please amend the paragraph at page 3, lines 4 through 11, as follows:

Increase of equivalent normal concrete thickness of composite pavement due to increase of flexural strength of concrete ~~of~~ subbase can be considered approximately as a measure of possible reduction of thickness of normal concrete surface course of this pavement. The design chart for composite concrete pavement with lean concrete subbase of modulus of rupture in the range from 150 to 450 psi is presented on the Fig. B1, Appendix 2 of said Portland Cement Association Engineering Bulletin. It allows estimation of equivalent normal concrete thickness of composite concrete pavement corresponding to the different combinations of thickness of lean concrete subbase and normal concrete surface course of pavement.

Please amend the paragraph at page 4, line 34, through page 5, line 2, as follows:

The compressive and flexural strengths of lean concrete are determined to a great extent by the quality of coarse aggregate. Lean concrete can be produced when local or recycled, relatively cheap coarse aggregates are available; the cost of concrete is determined to a large degree by the cost of coarse aggregate. The use of cheap small grains coarse aggregates is the one of the ~~way~~ <u>ways</u> of obtaining of lean and not only lean concrete.

Please amend the paragraph at page 8, lines 12 through 18, as follows:

Enriched limestone waste is one of the cheapest aggregates. However the use of concrete with this coarse aggregate for subbase and limitation of deformation of asphalt surface course by the choice of reasonable rigidity of base course ~~allow~~ allows obtaining of pavement intermediate between rigid and flexible pavement. Initial cost of this pavement should be close to that for flexible pavement with treated or non-treated granular subbase. Maintenance cost of this pavement is higher than that for rigid pavement, and it should be considerably less than that for flexible pavement. It means the increase of competitiveness of asphalt pavement as compared with concrete pavements.

Please insert the following paragraphs at page 9, beginning at line 2, as follows:

--Figure 1 is a cross-sectional view of a typical prior art flexible pavement with an asphalt ~~concrete~~ surface. This drawing is essentially the same as that appearing in the "Standard Handbook for Civil Engineers", McGraw Hill Co, current edition.

The prior art pavement may or may not require a separate subgrade 10. Laid on the subgrade 10 is a subbase 12, typically a compacted layer of granular material. Next is a granular base 14 which is directly under the asphalt surface 16 which is of aggregates such as crushed stone, crushed slag, gravel and sand, or a combination of these.

Fig. 2 is a cross-sectional view of a semi-rigid pavement according to the invention. A subgrade 20 may or may not be required. The subbase 22 is of concrete as described in detail below. The granular base 24 is or may be of exactly the same

material as the granular base 14 described above. Above the granular base 24 is asphalt surface course 26.--

Please amend the paragraph at page 9, lines 2 through 7, as follows:

Asphalt concrete pavement includes a concrete subbase 22 with coarse aggregate defined as an enriched limestone quarry waste of grading intermediate between the course and fine aggregates in Terminology of ASTM C125. This aggregate is a processed by-product of manufacture of crushed limestone of regular sizes. Concrete with this coarse aggregate is characterized by the specified compressive strength f_c^1 and modulus of rupture (MR) up to 5,000 and more than 750 psi, respectively.

Please amend the paragraph at page 9, lines 20 through 24, as follows:

Capacity of such composite structure as asphalt pavement can be estimated as the sum of capacities of layers of this pavement. Capacity of concrete subbase 22 of the certain thickness is determined by flexural strength of concrete. The increase of capacity of subbase 22 means the possibility of corresponding reduction of capacity of the more expensive asphalt surface course 22. Thus, concrete strength of subbase 22 is determined merely by the economical reasons.

Please amend the paragraph at page 9, lines 1 through 17, as follows:

If rigidity of this pavement is determined by the rigidity of concrete subbase, flexibility of this pavement is determined by the flexibility of the base course. Though the asphalt surface course 26 is the flexible part of this composite structure, realization of its flexibility depends on the rigidity of the base course 22 of this pavement. The choice of the reasonable rigidity of base course allows the keeping of deformations of asphalt surface course 26 within the desirable limits. Rigidity of the base course 22 is determined by the thickness and quality of granular material of this course. Crushed limestone of grading finer than 4.75 mm can be used for the base course.

Limestone quarry waste is very cheap and an efficient coarse aggregate ~~coarse aggregate~~ for concrete. Cost of lean concrete subbase with this coarse aggregate and minimum consumption of cement can not exceed considerably the cost of subbase of any granular treated material. Concrete of any strength with this coarse aggregate can be efficient for subbase, since increase of capacity of subbase means the possibility of reduction of asphalt surface course. Possible increase of cost of concrete subbase as compared with that for the usual granular subbase of asphalt pavement should be compensated by the reduction of asphalt surface course. Thus, the use of concrete subbase with this coarse aggregate does not mean the considerable increase of initial cost of pavement. At the same time, limitation of deformation of asphalt surface course should reduce cracking of this course and corresponding reduction of the maintenance cost of this pavement.

Please amend the paragraph at page 21, lines 3 through 12, as follows:

Variation of grading of enriched limestone waste is inevitable; it is in the nature of this material. Requirements for grading of enriched limestone waste as a coarse aggregate at the quarry after enrichment and in the aggregate bin of concrete plan should limit influence of variation of grading of this aggregate on the strength of concrete. However, adverse conditions of transportation of this aggregate to the concrete plant can cause its excessive breakdown. It does not mean that enriched limestone waste of this grading can not be used as a coarse aggregate for concrete. However excessive breakdown of this coarse aggregate influences the strength of concrete. If the amount of aggregate finer than 4.75 mm exceeds 2/3 of the total weight of aggregate in the aggregate bin, it means reduction of concrete strength. Additional consumption of cement is ~~requires~~ required to compensate for the degradation of this aggregate.

Please amend the paragraph at page 21, lines 23, through 25, and page 22, lines 1-5, as follows:

Flexural strength of concrete is an important quality of concrete. As applied to the thickness design of concrete pavement, flexural strength is the main quality of concrete. Concrete with crushed limestone as a coarse aggregate of grading intermediate between the coarse and fine aggregates in ~~is~~ the Terminology ASTM C125 can be considered as optimal in terms of flexural strength at least as compared with concrete with hard rock coarse aggregates of regular sizes. Compressive strength of concrete with this coarse aggregate is higher than that for concrete of the same

consumption of cement with crushed granite of regular sizes as a coarse aggregate, and the increase of compressive strength of concrete means the increase of flexural strength of this concrete.

Please amend the paragraph at page 25, lines 20 through 24, and page 26, lines 1-2, as follows:

The foregoing estimates of the values of the modulus of rupture of concrete depending on the values of specified compressive strength f_c^1 of this concrete are based on the test results of concrete with all types of coarse aggregate of regular sizes. Considerable part of these aggregates relates to the hard rock (gravel, crushed gravel, and crushed granite). It is well known that flexural strength of concrete with this coarse aggregate is in the range from 10 to 12 ~~percents~~ percent of compressive strength of concrete, and it increases up to the 15 ~~percents~~ percent of compressive strength for concrete with crushed limestone of regular sizes as a coarse aggregate.

Please amend the paragraph at page 26, lines 3 through 17, as follows:

It can be ~~waited~~ weighted the higher flexural strength of concrete with small grains crushed limestone as a coarse aggregate than the concrete of the same consumption of cement with crushed limestone or regular sizes as a coarse aggregate. It is possible due to more complete penetration of mortar into small grains crushed limestone and more uniform structure of concrete with this coarse aggregate than that for concrete of crushed limestone of regular sizes as a coarse aggregate. The first flexural tests of concrete with crushed limestone as a coarse aggregate of grading

intermediate between that for coarse and fine aggregate in the Terminology ASTM C125 confirm this tendency. In these tests the values of flexural strength of concrete equal to 418, 657 and 771 psi correspond to the values of compressive strength equal to 1,476, 2,821, and 4,166 psi, respectively. Flexural strength of concrete in these tests is in the range from 28.35 to 18.5 ~~percents~~ percent of compressive strength, diminishing with the increase of compressive strength. It does not mean the possibility of such estimations of modulus of rupture of concrete ~~depending~~ depends on the compressive strength of this concrete. There are only test results of the 3 series of two standard cubes brought to cylinder strength and two standard beams. However it means the tendency which should be checked during the mass production of concrete with crushed limestone of this grading for road construction.

Please amend the paragraph at page 27, lines 12 through 19, as follows:

Concrete with crushed limestone of grading intermediate between the coarse and fine aggregates in the Terminology ASTM C125 was checked in industrial conditions. Crushed limestone of this grading was used as a coarse aggregate for concrete of precast reinforced concrete temporary road slabs 1.75x3.0x0.16m dimensions. More than 500 of these slabs were produced on September-October 2000 at this plant. These slabs are used for access roads to buildings under construction. They are placed usually into mud without any subbase and work separately. Conditions of service of these slabs under extensive truck traffic are more than adverse. However there are no financial claims to a plant connected with the strength of those slabs.